

CLAIMS

1. Metal nanoparticles containing a metal component, further containing at least one of P, N, and O, and the average particle diameter being from 1 to 100 nm.
2. The metal nanoparticles according to Claim 1, wherein the metal component is at least one type of transition metal.
3. The metal nanoparticles according to Claim 1, wherein the metal component is at least one of Cu, Ag, Au, Ni, Pd, and Pt.
4. The metal nanoparticles according to Claim 1, wherein the metal component is an intermetal compound or alloy composed of two or more metals.
5. The metal nanoparticles according to Claim 1 or 2, wherein the metal component is contained in an amount of 60 to 98 wt%.
6. A method for manufacturing metal nanoparticles by heat treating a starting material containing a metal salt, in the presence of an amine compound and in an inert gas atmosphere.

7. The method according to Claim 6, wherein the metal salt is at least one of (1) metal carbonates, (2) fatty acid salts, and (3) metal complexes.

8. The method according to Claim 6, wherein the starting material further contains a fatty acid.

9. A method for manufacturing metal nanoparticles by heating treating in an inert gas atmosphere a metal complex having a phosphine ligand and a carboxylate ligand.

10. The manufacturing method according to Claim 9, wherein the heat treatment temperature is within a temperature range such that weight loss will be from 1 to 50% when said metal complex is subjected to thermogravimetric analysis.

11. The manufacturing method according to Claim 9, wherein the metal complex has no ligands other than a phosphine ligand and a carboxylate ligand.

12. A method for manufacturing metal nanoparticles which comprises a step of heat-treating a mixture containing (1) phosphine and (2) (i) a metal salt of a fatty acid or (ii) a fatty acid and a metal salt in an inert gas atmosphere.

10/522941

DT05 PCT/PTO 31 JAN 2005

The English translation of PCT Article 34 Amendment